

Magna 210 Super-Versatile Electrode for Copper Alloys

Magna 210 is excellent for joining a wide variety of dissimilar metals. It is highly resistant to wear and corrosion. It is excellent for rebuilding Butterfly Valves, Scott Blower Bushes and Water Pump Impellers in Boiler Plants.

Magna 303 Gold Ferrite Balanced Super-Strength Non-Cracking Alloy for All Steels

Magna 303 Gold is a new formulation alloy that welds all steels and dissimilar metal combinations. This electrode provides "Ionised Arch Transfer" that drastically reduces spatter and electrode overheating, especially on small AC machines.

Magna 303 Super Strength Non-Cracking Alloy for All Steels

Magna 303 is a maintenance electrode that welds all steels including high alloy steels. It provides excellent heat and corrosion resistance. Magna 303 is excellent for rebuilding of Turbine Rotor Shafts, Turbine Housings and Coal Nozzles in Turbine Generators.

Magna 305 Super Tough Alloy for High Strength Steels

Magna 305 is a high alloy electrode for welding T-1 and other heavy-duty steels. Magna 305 is ideal for rebuilding Conveyor Screw Flights / Sprockets, Bunker Funnels and Coal Mill Exhauster Blades in Coal Handling Plants.

Magna 305 is also available for T.I.G. process.

Magna 307 "Magnamatic" Electrode for Mild Steel

Magna 307 is an all position alloy steel electrode. It is designed for repair work on mild steel, particularly "on site" and restrictive positions.

Magna 401 Universal Hard Facing Electrode

Magna 401 does not crack even if applied in volume or welded rapidly without cushioning. Ideal for rebuilding on worn parts on Chains, Pins / Sprockets of Hydraulic Shovels and Excavators.

Magna 402 Impact-Resistant Alloy for Manganese Steel

Magna 402 is an electrode, which is austenitic in structure and non-cracking. It can withstand extreme shock, loading and impact. It is ideal for overlays and rebuilding of Coal Handling Bucket Lips and Crusher Hammers.

Magna 404 Hard Facing Electrode for Extreme Abrasion

Magna 404 contains hard tungsten cobalt carbides in a tough alloy steel matrix. This special formulation is designed to resist severe grinding abrasion and extreme wear. The electrode can be applied using either torch or arc welding equipment.

Magna 405 Superior Build-up Electrode

Magna 405 is recommended for use in building up of worn parts subject to machining later. It is excellent for flame hardening or pack hardening.

Magna 505 "Super Ease" High-Strength Alloy for Aluminium

Magna 505 is an easy to use, non-hygroscopic aluminium electrode. It is popularly used to rebuild Fire Nozzles of CHSP, Sky Climber Gear Boxes and Motor Cover Bodies in Boiler Plants.

Magna 770 High-Strength Non-Cracking Machineable Electrode for Cast Iron

Magna 770 is specially designed to weld all types of cast iron encountered in maintenance applications. It requires little or no preheating. It is ideal for repairing and rebuilding of Ash Extractor Pans, Ash Pump Housings and Bell Housings in Boiler Plants.

Magna Welding Alloys Specialities

Magna 904 "Heat Ban" Insulating Compound

Magna 904 is a jelly-like compound that actually absorbs and dissipates heat. It is safe to use on all surfaces. It has no unpleasant odour nor does it give off irritating or obnoxious fumes.

Magna 940 Rapid Repair Compound

Magna 940 is an instant repair compound that is excellent for "cold" repairs on parts and surfaces made of steel, copper, aluminium, cast iron, stainless steel, brass and chrome.



About ITW

ITW (NYSE:ITW) is a Fortune 200 global multi-industrial manufacturing leader. The company's seven industry-leading segments leverage the unique ITW Business Model to drive solid growth with best-in-class margins and returns in markets where highly innovative, customer-focused solutions are required. ITW has nearly 50,000 dedicated colleagues in operations around the world who thrive in the company's unique decentralized and entrepreneurial culture. To learn more about the company and the ITW Business Model, visit www.itw.com.

To offer the best service to each market segment, ITW PP & F Korea Limited operates the following divisions that are branded uniquely for the most prominent recognition by users and customers:



OMEGA Ultimate Lubricants

Specializing in lubrication solutions - greases, oils and additives



MAGNA Welding Alloys

Specializing in gas and arc welding consumables for maintenance



CORIUM Industrial Chemicals

Specializing in industrial & commercial chemicals and adhesives



ZETALUBE Lubricants

A new lubricity dimension evolved from experience

WE SUPPLY SUPERIOR PRODUCTS THAT MAKE MAINTENANCE:

- FASTER
- SAFER
- MORE RELIABLE

Our products are engineered to:

- Lower costs
- Reduce downtime
- Cut wastage

At ITW PP & F Korea Limited we are fully committed to a proactive approach to safety, health, environment and product improvement. Our commitment is well reflected in:

- Our continuous Research and Developments
- Our on-going in-house Training and our in-house Training Facilities
- Our comprehensive range of Quality Products
- Our many long-term Repeat Customers.

Contact Us



13th floor, Unit B,
PAX Tower, 609 Eonju-ro,
Gangnam-gu, Seoul,
Korea 06108
email: enquirygroup@magnagroup.com

VISIT OUR WEB SITE AT: WWW.MAGNAGROUP.COM

ITW PP & F Korea Limited is a business unit of Illinois Tool Works Inc. (ITW), U.S.A.

Distributor:

We reserve the right to modify or change products for purposes of improving performance characteristics. © 2017 ITW PP & F Korea Limited

The OMEGA, MAGNA, CORIUM & ZETALUBE Trade Marks are the properties of ITW Inc., and are used under licence by ITW PP & F Korea Limited

The information contained in this publication supersedes all relevant information previously released and is to the best of our knowledge and accurate at the time of issue on April, 2017.



Magna
Welding Alloys

Total Maintenance Welding Solutions for Power Plants

MPL 038 Eng Version

© 2017 ITW PP & F Korea Limited. All rights reserved.





As the world's demand for electricity increases, existing **Power Plants** are under extreme pressure to maintain the pace of power generation.

Under such pressure and stress there are frequent breakdowns caused by:

- Wear and tear
- Corrosion and abrasion
- Inability to replace damaged and rejected components due to high cost

An inadequate maintenance program invariably results in excess downtime, during which production equipment is inoperative and making no contribution to profits.

With spiralling cost of labour and new parts experienced by Power Plants today, scraping or replacing of parts is not the answer. The alternative is to salvage expensive parts by rebuilding with proper **maintenance welding products**. Extending the life of machinery parts through use of such electrodes is an acceptable practice today. This would minimise downtime cost for the equipment, as well as save labour and replacement cost.

The conditions for production welding are entirely different from conditions for maintenance welding. In production welding the base metal is known, welding environments are ideal and projects are repetitive. In maintenance welding the base metals are unknown, welding conditions less than ideal and repairs often are carried out on corroded and contaminated parts.

How Magna Welding Alloys Benefits You

Magna Welding Alloys, a Division of ITW PP & F Korea Limited, has been pioneering since 1968, the concept of **"total maintenance welding solution"** for the Power Plants in order to achieve the following objectives:

- Reduction in inventories
- Minimising labour cost
- Improved availability of equipment
- Shorter shutdowns and faster start-ups
- Extensions of overhaul intervals

Research and Development:

Magna's Research team is continuously formulating products to meet the demands and changing trends of Power Plants worldwide. Its team is dedicated to working in close partnership with its distributors and customers to provide a quality and comprehensive product range with complete technical back up service.

Network of Distributors:

The competitive advantage of Magna Welding Alloys is the ability to respond to customer's application needs and supply products quickly through its extensive network of Distributors and Marketing Consultants around the world.

Environmental Policy:

Magna Welding Alloys recognizes environmental protection as an integral part of its business activities. The company has an environmental policy that aims to minimize impact on its customers, its employees and the community. Objectives set within the policy are directed at conserving natural resources and reducing waste generated in areas of its activities.

Internet and Intranet site:

Magna's Marketing Consultants located at various cities and its Distributors utilize an information system provided by the Internet Technology in order to response almost immediately to customer's queries.

Personal Service from our Technical Specialist:

Magna Welding Alloys highly trained Marketing Consultants, Distribution Representatives and Welding Consultants are available to provide a complete package (ask for details from your local representative) to determine your individual welding needs which include the following:

Customer Support Service:

- Problems and complaints investigation
- Base metal applications recommendation
- Responding to Technical enquiries

In-house Training Program:

- Trained Representatives can conduct seminars and presentations on a continuous basis, covering subjects such as cost savings, product applications and health and safety requirements.
- In-house training programs are customised on request

On Site Visits:

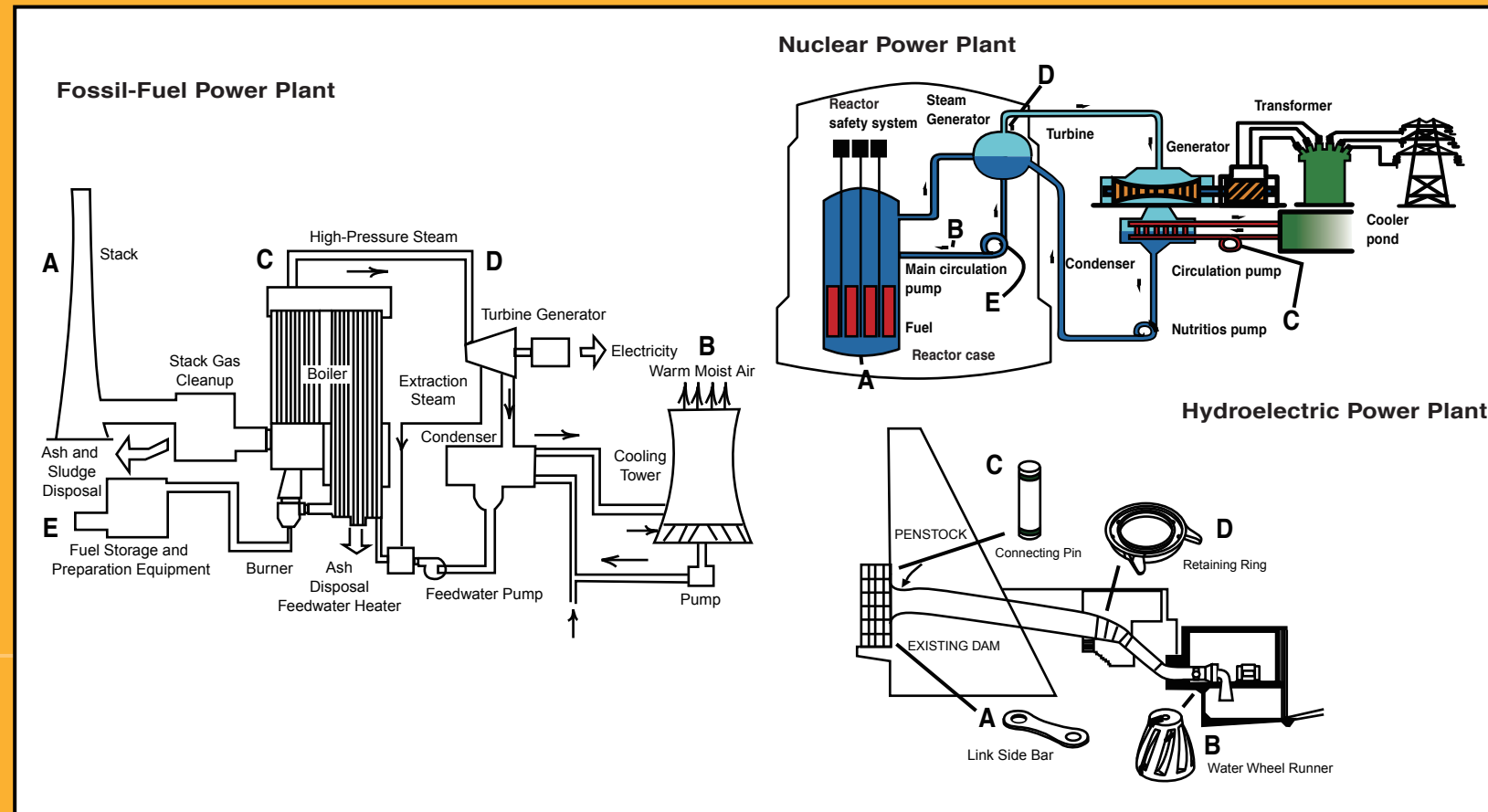
- Regular on sites visits conducted by Export Managers and Distribution Representatives
- On-site visits can be conducted by Welding Consultants on request
- On-site demonstrations can be conducted by Distribution Representatives on request

Typical Application - Hydroelectric Power Plant

Item	Machinery Application	Problem	Magna Products	Competitive Advantage
A	Link Side Bar	Crack	M 77F	Excellent general purpose brazing alloy for cast iron and other metals.
B	Water Wheel Runner	Wear	M 777	High-tech "controlled blast pulse" action automatically burns off surface contaminants before weld metal transfer.
C	Retaining Ring	Crack	M 770	Designed to weld all types of cast iron.
D	Connecting Pin	Wear / Corrosion	M 303 Gold	An electrode that welds all steels thereby reducing inventory.

Typical Application - Nuclear Power Plant

Item	Location	Equipment	Problem	Magna Product	Competitive Advantage
A	Rod Safety Control	End Cap	Crack	8N12	Excellent for all position welding. Ideal for high-nickel alloys, including monel and inconel.
B	Pump	Pump motor shaft	Wear	M 303 Gold or M 405	Outstanding restrike characteristics, minimal spatter and self-releasing slag.
C	Pump	Pump Impeller	Wear / Crack	M 77F or M 303 Gold	Alloyed core wire with unique flux coating produces strong, crack-resistant welds.
D	Turbine	Turbine Housing	Crack	M 770	Easy to weld through oil, grease and other contaminants.
E	Reactor Pump	Pump Screen	Pin Hole & Hair Crack	M 88C	A low temperature solder with excellent wetting action on a wide range of metals.



Typical Application - Fossil-Fuel Power Plant

Location	Equipment	Problem	Magna Product	Competitive Advantage	
A Ash & Slurry	Ni-hard Ash Slurry pumps	Crack	M 401 & M 405	An electrode excellent as a tough overlay for building-up of worn parts.	
	Mn steel clinker grinder	Crack	M 402	Withstand extreme shock, loading & impact.	
	ESP 3 units	Hoist gear box	Wear	M 770	Produces crack-free weld deposits that are machinable
B Control & Inst. Dept	Cast iron gate valves	Jammed disc	M 770	Designed to weld all types of cast iron.	
	Resistance Temperature Detector	Difficulty in Soldering	M 88C	This low-temperature solder is stronger than ordinary solders.	
	High Density Cards	Difficulty in soldering LC	M 88C	Contains no lead, zinc, cadmium, antimony or other metals that corrode.	
C Boiler Plant	Pressure parts, Headers & Valves	Inaccessible Areas	M 100	No special equipment is needed for this electrode.	
	CHSP	Fire Nozzle	Crack	M 505	Provides easy slag removal.
	Sky Climber	Gear box	Wear	M 505	Welds are stronger than pure aluminium.
	EMG Actuator	Clutch ring	Crack	M 303 Gold	An alloy excellent for repairing unknown or dissimilar steels.
D Turbine Division	Shaft	Wear	M 307	Excellent for restrictive position welding.	
	Shut off gate - hot air	Aluminium cover of cylinder	Crack	M 505	Requires no special skills or equipment to use this electrode.
	Boiler Feed Pump Lub. Oil Cover	Crack	M 770	Requires no preheating. Welds on all types of cast iron.	
	Bearing cooling water line	Leak	M 307	Will not spatter even on wet surfaces.	
	Coal Nozzle	Crack	M 303 Gold	Weld deposits are machineable	
E Coal Handling plant	BHEL Air Fan Motor	Crack	M 303 Gold	Provides excellent resistance to corrosion.	
	RPG Axle Pinion gate	Broken	M 770	Designed to weld on all types of cast iron. Produces crack-free welds that are machinable	
	Wagon tippler	Crack/Wear	M 303 Gold	Gives excellent weldability in both AC & DC	
	Backs	Crack/Wear	M 303 Gold	Provides welds with highest crack resistance.	



For many welding products, Magna uses high purity core wire generally having a much higher content of noble or semi-noble metals such as nickel, molybdenum, columbium, cobalt etc. than ordinary consumable manufacturers. Also its electrodes are coated with the state of the art - **"Magna Flux Coating"** technology formulated for maintenance welding.

Check with your local Magna Welding Alloys Distributor for a comprehensive list of products that are available.

Gas Welding And Brazing Rods

Magna 55 Superior Alloy for Aluminium

Magna 55 is an aluminium alloy that welds all types of aluminium - both sheet and cast. Its unique two-stage melting range is excellent for both thin-flowing and rebuilding applications. It is ideal for rebuilding Pump Screens in Boiler Plants and Tipper Motor Housings in Coal Handling Plants.

Magna 55 is also available for T.I.G. process.

Magna 77F Super Strength Universal Flux-Coated Brazing Alloy

Magna 77F has a tensile strength double that of most ordinary brazing rods. It can be used on nearly all metals including cast iron, bronze, brass, monel, stainless steel, nickel and all steels.

Magna 88C Low Temp High-Strength Solder for Stainless Steel

Magna 88C contains no lead, zinc, cadmium, antimony or other metals that corrode easily. It is designed for applications requiring higher strength than that obtained from ordinary soft solders.

Arc Welding Electrodes

Magna 8N12 Universal Electrode for Nickel Alloys

Magna 8N12 is excellent for joining dissimilar metals. It has high heat resistance and excellent mechanical and physical properties. It is ideal for rebuilding of Heat Exchange Tubing, Combustion Systems, Thrust Reverse Assemblies, Steam Service Parts and Turbine Frames.

Magna 100 Superior Chamfering Electrode

Magna 100 is an exothermic coated electrode ideal for chamfering, grooving and gouging inaccessible areas such as Pressure Parts, Headers and Valves in Boiler Plants. No special equipment or skill is needed.